

Plan Review Checklist

1 & 2 Family Residential

8th edition Grafton , Massachusetts



PROCEDURE FOR OBTAINING A BUILDING PERMIT FOR 1 OR 2 FAMILY (ADDITIONS, ALTERATIONS AND ACCESSORY STRUCTURES)

GENERAL SUBMISSION INFORMATION:

1. **Massachusetts State Building Code, 780 CMR 8th Edition,**
2. **Application form page 1**
 - o Property Address
 - o Zoning District
 - o Building Setbacks
 - o Water Supply, Flood Zone Information, Sewage Disposal Information
 - o Property Ownership / Authorized Agent
 - o Authorized Agent
3. **Complete page 2 and 3 of application form**
4. **Plot Plan §5110.7.4 (separate from building plans) required for additions and accessory buildings to include;**
 - o This plan shall be prepared by an Engineer or Registered Land Surveyor in accordance with the Massachusetts Registration Laws, and submitted to the Inspector of Buildings prior to framing
 - o Location of existing and proposed construction with dimensioned setbacks
 - o Location of lot lines, dimensions of lot & frontage
 - o Property address: map & lot number, zoning district & overlays
 - o Statement that existing condition does / does not lie within a Flood Hazard Zone as shown on the F.E.M.A map of the Town of Grafton
 - o Septic System location with reserve area
 - o Well location if applicable
 - o Wetland delineation if applicable
 - o North Arrow
 - o Drawing scale
 - o Date of Document
 - o Location & dimensions of public easements, public utility easements, railroad right-of-ways, and established zoning setback requirements.
 - o Location & dimensions of primary & accessory buildings & structure also street access drives and walks or other conditions rendering the land surface impervious
 - o 5403.1.7.2 Foundation Clearance from Slopes

The Plan Submitted to Have

- Original Seal (wet seal)
- Original signature
- A copy electronically submitted in PDF or Auto Cad Format

5. Completed Energy Conservation Application Form

6. **Three sets of plans** and specifications showing the proposed work
- o Temporary structure applications shall indicate begin and end time, and size of structure.
- Tents and similar structures must produce a Certificate of Flame Retardant

SEE TABLE 5301.2(1) FOR FOOTNOTES

Ground Snow Load	Wind Speed (mph)	Seismic Design	Weathering	Frost Line Depth	Termite	Decay	Winter Design Temp	Ice Shield Underlayment Required	Flood Hazard	Air Freezing Index	Mean Annual Temp
<i>Table 5301.2 (5)</i>	<i>Table 5301.2.(4)</i>	<i>N/A</i>	<i>Figure 5301.2 (3)</i>	<i>4 ft. minimum unless engineered data shows otherwise</i>	<i>Figure 5301.2 (6)</i>	<i>Figure 5301.2 (7)</i>	<i>Appendix 780 CMR 120.J Table 120.J.3.2.1</i>	<i>As required by the exterior roof covering manufacturer; roof pitch and local climate must also be considered</i>	<i>Refer to applicable Flood Insurance Rate Map (FIRM)</i>	<i>Only utilized in the design and construction of frost protected shallow foundations</i>	<i>Only utilized in the design and construction of frost protected shallow foundations</i>
40 psf	100 mph	NA	Severe	§5403.1.4	Moderate to Heavy	Slight to Moderate	NA	§5905.0	FIRM MAPS	See note J Table 5301.2(1)	See note K Table 5301.2(1)

PROCEDURE FOR OBTAINING A BUILDING PERMIT FOR 1 OR 2 FAMILY CONSTRUCTION FOR UNDEVELOPED LOT & ADDITIONS, ALTERATIONS, ACCESSORY STRUCTURES

NEW

(In addition to the above requirements)

1. Building Construction Documents

• **General**

- o Three complete sets of construction documents §5110.7
- o Construction documents for structures to be constructed in flood hazard areas are required to be prepared by a design professional pursuant to §5110.7.2
- o Also see Grafton Zoning Bylaws
- o Documentation concerning disturbed / fill soils that support foundations shall be in accordance with §5401.2

• **Construction Drawings**

Cover Sheet

- o Address with Assessor Map and Parcel
- o Date of latest revision
- o Tabulated Square Foot Area all levels (and spaces if applicable)
- o Design live load all spaces and levels
- o Mean building height above grade
- o Wind Exposure category each building side
- o Window, door, skylight and cladding schedule showing associated positive and negative design pressure and zone number.
- o Identify class of material Table 5401.4.1 and Table 5405.1

Construction documents (1/4" scale minimum)

- o Floor Plan (all levels)
- o Building dimensions Space designation – (ie: living room, kitchen, bedroom, storage, etc.)
- o Demonstrate light and ventilation compliance §5303
- o Door and window location per schedule on cover sheet, identifying egress windows and safety glazing
- o Show attic access size and location
- o Location and type of smoke detectors and carbon monoxide detectors
- o Emergency escape and rescue required. Basements, habitable attics and every sleeping room shall have at least one operable emergency escape and rescue opening.

- o Heating system location, size (BTU), location of fuel source and method of combustion air make-up
- o Solid fuel burning appliance location, size, installation manual and method of combustion air make-up
- o Location of ductwork...if installed in exterior wall, the Energy Conservation Application Form noted above must reflect decreased R-value or indicate method of maintaining exterior wall integrity.

Foundation Plan

- o Show dimensions and location of all footings, pads and columns
- o Footing sections and elevations where steps are intended
- o Show size and location of all steel reinforcement bars if applicable
- o Wall height and thickness with concrete PSI rating
- o Anchor bolt size, spacing and embedded depth
- o Show basement / crawl space ventilation method
- o Show basement / crawl space access size and location
- o Foundation hold down devices type and location when used with the alternative braced wall panels for braced wall requirements as allowed by § 5602.10.6
- o Location and framing size of all cripple walls, with detail of walls less than 14 inch stud height
- o Location of foundation drain exhaust or sump pit...drainage exclusion exception must be approved by building official § 5405

Framing plan

- o Conventional framing plan all levels including roof, showing size, spacing and direction of structural members
- o Conventional header and beam sizes, spans and bearing clearly showing load path to foundation (ie: doorways, windows, archways, overhead doors, covered porches and decks and structural ridges)
- o Engineered floor framing and roof truss plans stamped by a professional registered engineer in the Commonwealth of Massachusetts.
- o Roof truss layout shall show type of uplift protection, bearing location, hangers and any other unique application. Multiple roof layouts shall require separate roof sectionals.
- o Engineered manufactured beams and columns stamped by a registered professional engineer in the Commonwealth of Massachusetts. Calculations shall be site specific verifying they generated the loads indicated and that the input and output data provided is site specific to include verification of load path and column adequacy to foundation...disclaimers of any kind shall be rejected.
- o Provide stamped engineered analysis for bearing stud wall height greater than 10 feet, and for non-load bearing stud walls in excess of heights listed in Table 5602.3(5).
- o Show exterior and interior wall bracing locations supporting wall brace method identified on cover sheet.

Elevations

- o Exterior building elevations all sides to include final grade
- o Exterior siding material – provide evaluation report for types of exterior wall cladding in conformance with the design pressure schedule provided on the cover sheet Exterior roofing material I– provide evaluation report for types of exterior roofing material in conformance with the design pressure schedule provided on the cover sheet

Cross sections

- o Complete cross section of all unique sections of building, detailing method of construction from undisturbed soil to roof, including changes in floor levels.
- o Stair detail showing type of material, rise and run, headroom height, handrail and guardrail.
- o Masonry fireplace section showing fireplace opening size, throat size, damper location, smoke shelf, flue type and size and height of chimney above hearth level.
- o Finished ceiling height all levels

Wall Bracing Plan Layout

- o Clearly identify on separate sheet the method number and location of all bracing on each wall line, all levels, including interior partitions if necessary §5602.10...the following is an aid to assist in complying with §5602.10 and is not intended to replace the written text of the code;
- o Identify wall lines (§5602.10)
- o Start with the exterior wall lines
- o Wall lines spacing cannot exceed 35 feet (§5602.10.1.1)
There are exceptions...if used, provide calculations
- o Identify interior wall lines if necessary to satisfy the 35 foot rule
- o Wall lines are permitted to have offsets provided that each offset is no greater than 4 feet and the total aggregate of offsets do not exceed 8 feet within a wall line

2) Choose one wall method per wall line (§5602. 10.3)

- o **Do not mix methods per wall lines**
- o Clearly identify the method on the plan for each wall line
- o Identify all alternative braced wall methods (§5602.10.5; §5602.10.6; APA narrow wall bracing method)

Provide elevations, sections and details as required to clearly demonstrate application

3) Show location of all braced panels on plans

- o There shall be at least one braced panel at each end of a wall line
- o Braced wall panels are allowed to be located no greater than 12 feet 6 inches from the end of a wall line
- o There shall be at least one braced wall panel every 25 feet

4) Any component that does not comply with the code prescriptive design shall bear the seal of a registered professional engineer

- ⇒ Approved construction documents shall remain attached to the permit card for the duration of the scope of work indicated on the permit...failure to have intact permit package onsite for all inspections may result in a failed inspection §5111.11
- ⇒ Permit shall expire within six months from the issuance date if the work authorized by the permit has not commenced or unless extensions have been granted by the Building Official. §5111.8
- ⇒ Field modification to the approved plans will not be allowed unless authorized by the Building Official §5113.3 prior to the modification
- ⇒ All approved field modifications shall be incorporated into a final as-built set of construction documents labeled As-built, to be submitted prior to the final approval. §5113.3
- ⇒ The permit card shall identify required inspection phases and inspector contact information...it is the responsibility of the permit holder to secure the proper signatures to completion. §5115

PLAN AHEAD...New house construction with the intent to make habitable the basement area at a later date must comply with §5305, §5310 and §5406